

RECOMMENDED ACTIONS

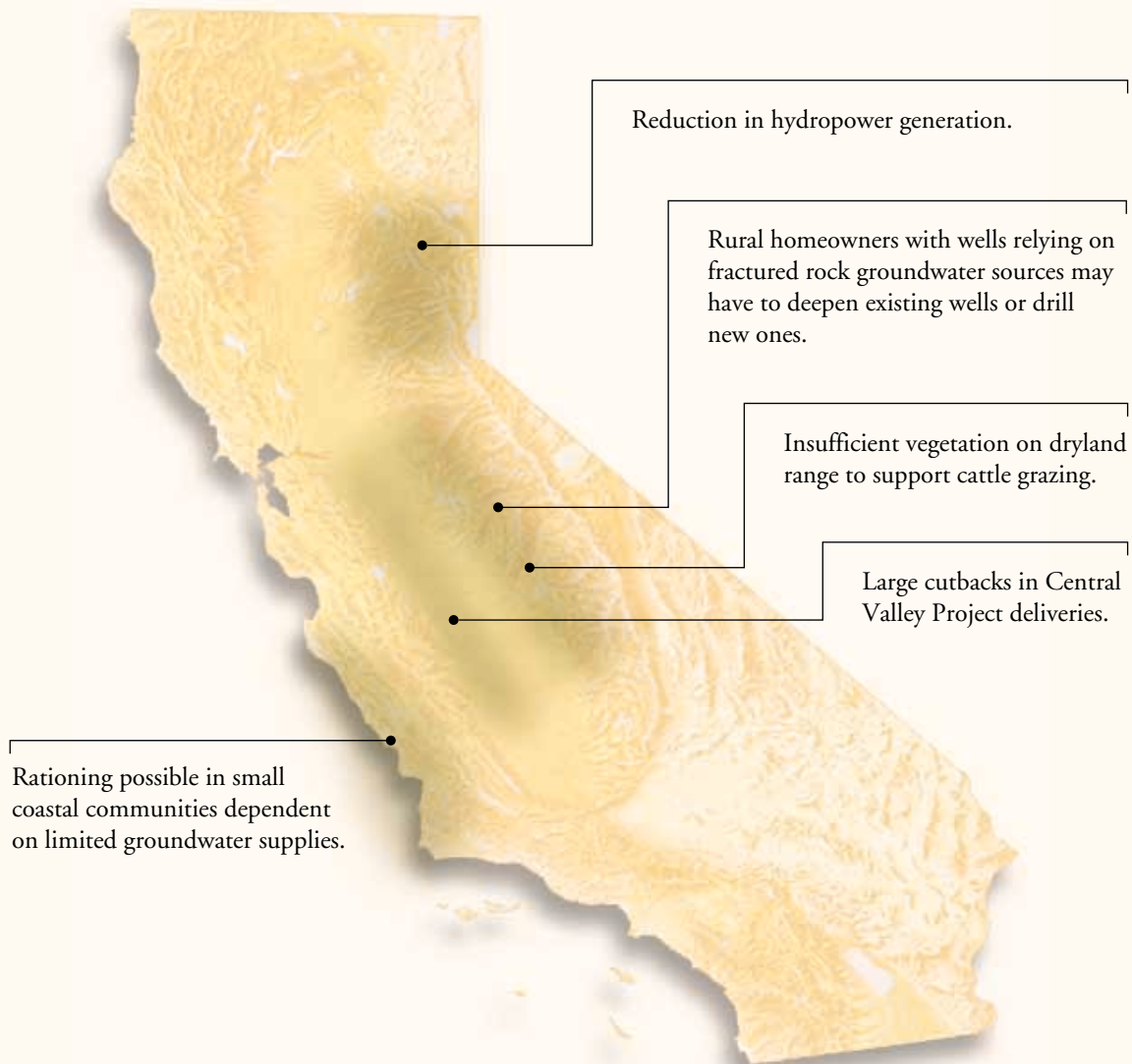
This chapter describes actions that the Department could take in preparation for the next drought, and in the early stages of response to a drought. These actions are necessarily based on California water and institutional conditions as they exist in mid-2000. The now-recommended actions should be periodically re-

examined in light of the changes in water management conditions that will inevitably occur over time.

One dry year does not constitute a drought, but is a reminder of the need to plan for the occurrence of a second dry year. California's extensive system of water supply infrastructure and the planning performed by

—FIGURE 24—

Probable Impacts in a Single Dry Year



local water agencies mitigate impacts of short-term dry periods. Likely impacts in a single dry year are shown in Figure 24. Most impacts would be felt by water users relying on annual rainfall, such as rural homeowners on marginal wells or ranchers dependent on dryland grazing. Dry year hydrologic conditions would also exacerbate the shortages stemming from CVPIA implementation and Delta export restrictions experienced by CVP water users on the San Joaquin Valley's west side.

Defining when a drought occurs is a function of the impacts of dry conditions on water users. The Department used two primary criteria to evaluate statewide conditions during the 1987–92 drought—runoff and reservoir storage. A drought threshold was considered to be runoff for a single year or multiple years in the lowest ten percent of historical range, and reservoir storage for the same time period at less than 70 percent of average. These were not

hard and fast values, but guidelines for identifying drought conditions. For example, the Department instituted a drought watch in 1994, based on forecasted statewide reservoir storage being at 75 percent of average. This decision took into account depleted groundwater storage conditions still remaining from the earlier six years of drought.

The following recommendations are divided into two categories—those dealing with general drought preparedness, and those intended to be implemented when dry conditions are being experienced. Implementation of this latter category of recommendations would be triggered in a dry year, with the intent of preparing for a second consecutive dry year. Deciding when to begin implementation, and with what level of effort, would be a judgement call based on considerations such as statewide reservoir storage or status of regulatory actions affecting Delta exports.



An example of the reason for drought preparedness planning. USBR's 240 taf Twitchell Reservoir on the Cuyama River in San Luis Obispo County, in 1990. The reservoir, a facility of USBR's Santa Maria Project, provides supplemental irrigation supplies for Santa Maria Valley.

LONG-TERM DROUGHT PREPAREDNESS PLANNING

One aspect of response planning is having information and resources available when drought conditions occur. Listed below are items that would contribute directly to Department drought response actions or would be useful in working with local agencies to develop drought response actions.

SWP Actions

- Work with the CALFED Operations Group or its successor entity to begin conceptual development of multi-year SWP and CVP operations strategies (*i.e.*, reservoir carry-over storage strategies). Such strategies would be useful not only for drought planning purposes, but also for evaluating possible responses to different fishery protection or regulatory requirements. This exercise would essentially extend CALFED's operations modeling process over a longer time period, and would be coordinated with preparation of the drought contingency plan called for in the June 2000 CALFED action framework document.

Local Assistance Actions

- Seek additional funding or partnerships to support the Department's basic water measurement programs—stream gaging and groundwater level measurement. Eroding federal financial support for the USGS state-federal cooperative stream gaging program has resulted in continued loss of gaging stations. Resource limitations have eliminated the Department's program for field measurement of groundwater levels in Southern California. Locations with increased water measurement needs include stream segments with fishery protection or other environmental goals, Central Coast groundwater basins subject to seawater intrusion, and Southern California groundwater basins not under active local agency management.
- Update and publish the Department's water well standards. The standards currently exist in two parts—Bulletin 74-81 (published in 1981) and a separately printed supplement. The two parts should be combined into one document, updated to reflect current Water Code requirements, and made available on the Web. Past experience demonstrates that the number of wells drilled or deepened during droughts increases substantially. There will be a corresponding increase in public requests for information on water well standards.

- Develop a fact sheet and Web page identifying county agencies administering water well standards. Provide telephone numbers and other contact information for each agency.
- Closely review the shortage contingency elements of the urban water management plans which suppliers serving more than 3,000 connections or 3,000 customers are required to submit to the Department by December 31, 2000. Identify plans needing more emphasis in this area, and work with the water suppliers to develop improvements.
- Develop an internal database-backed website for extracting information from urban water management plans, to make the information readily available for analysis. This action would facilitate responding to the numerous public and media information requests typically received during a drought.
- Continue efforts to site more California Irrigation Management System weather stations in urban areas, in coordination with the California Urban Water Conservation Council. Managers of large urban turf areas (*e.g.*, parks or schools) could use CIMIS climatological data to help respond to landscape irrigation restrictions commonly imposed during droughts. CIMIS stations have been installed in agricultural areas throughout the State, but have not been as widely distributed in urban areas due to the difficulty of finding suitable locations.
- Survey some of California's larger urban areas to determine the extent to which the Model Water Efficient Landscape Ordinance is being implemented, and estimate its effectiveness in reducing landscape water use as compared to pre-1992 conditions. Interest in demand reduction programs during the last drought led to enactment of this requirement, but there has been no evaluation of water savings resulting from its implementation. In general, actual data on residential landscape water use are minimal throughout the State. Knowing more about actual landscape water use would facilitate developing drought-related water education materials.
- Identify and fund research in the areas of long-range weather forecasting, global climate change, and paleoclimatology. The former would, as described in Chapter 1, be useful in operating water projects to take advantage of expected hydrologic conditions. The goal of paleoclimatology research would be to reconstruct past hydrologic sequences to allow at least qualitative, and preferably quantitative, simulation of

present-day water supplies under hydrologic conditions extending beyond the roughly 100 years of historical record. The Department is currently funding the University of Arizona's Laboratory for Tree Ring research to perform a limited reconstruction of Sacramento River hydrology.

ACTIONS TO BE TAKEN WHEN DRY CONDITIONS OCCUR

Implementation of actions listed below would begin in a dry water year, to prepare for the possibility of a second dry year. Many of the actions would then be carried over into the second year, and subsequent years, if conditions remained dry. By January of the second year, consideration should be given to establishing a Department drought response team to coordinate response activities for a second dry year, if conditions remain dry. Continued dry conditions through April of the second year would suggest the desirability of creating an interagency coordination team, with representation from agencies such as SWRCB, DFG, and Department of Food and Agriculture.

SWP Actions—Water Year One

- If the early February Sierra Nevada snow survey data and resultant water supply forecasts indicate dry conditions, begin developing proposed multi-year SWP operations plans, in coordination with the CALFED Operations Group and CVP operators. Involve SWP contractors in the operations planning, with the goal that contractors' October preliminary delivery requests be reflective of proposed dry year operations plans. Several alternative plans could be developed, with alternative selection being triggered by forecasted water supply conditions as of some specified date.

SWP Actions—Early Water Year Two

- After reviewing the contractors' preliminary delivery requests and current water supply conditions/Delta conveyance restrictions, make a tentative selection of operational strategies for the coming year. Modify as needed based on subsequent snow survey information.

—TABLE 8—

Comparison of November 1993 Drought Water Bank EIR Conditions to Present Conditions

	1993	2000
Delta operations	D-1485	WR 95-6
Listed fish species	winter-run salmon	winter-run salmon fall-run salmon Delta smelt Sacramento splittail* coho salmon steelhead trout
CALFED operations	no	yes
CVPIA operations	no**	dedicated water/ supplemental water
Monterey Amendments	no	yes

* Listing decision found to be arbitrary and capricious by the federal district court in July 2000. Further action by court is pending as this report goes to printing.

** CVPIA was enacted in October 1992. CVP operations to meet dedicated water requirements in 1993 were not available for analysis in the EIR.

- Evaluate the need to increase the frequency or extent of subsidence monitoring along the California Aqueduct in the San Joaquin Valley, in expectation of increased groundwater extraction by local water users.
- Evaluate the extent to which drought-related water operations plans would facilitate or hinder major maintenance activities, inspections, or planned outages.
- In the summer of the first year, begin holding public workshops on water well construction fundamentals and the Department's well standards, targeting rural counties with large numbers of individual residences on wells. The workshops should also cover well maintenance and rehabilitation, subjects frequently unfamiliar to former urban residents who move to rural property served by a private well. Residential water users and small water systems experiencing the most problems in past droughts were those in the North Coast region and the Sierra Nevada foothills.

Local Assistance Actions—Water Year One

- In January of the first year, submit a request for funding in the Governor's May budget revision for the coming fiscal year, to update the programmatic EIR for the drought water bank. If the water year continues to be dry, work on a new EIR could then begin in July. As illustrated in Table 8, changed Delta operating conditions have made the 1993 programmatic EIR outdated.
- In January of the first year, submit a request for funding in the Governor's May budget revision for the coming fiscal year, to begin placing additional mobile irrigation management labs in the field. It would be desirable to maximize the number of operating labs during multi-year dry periods, to help growers make the best use of limited water supplies. In 1999, there were nine operating mobile labs. The Department's current funding for this program supports coordination activities only, not lab operation.
- In spring of the first year, promote CIMIS through workshops and media outreach. Growers or landscape managers can use CIMIS information to improve irrigation scheduling, a useful water management action even if the next year returned to normal water supply conditions.
- Also in spring, begin developing fact sheets and related information to facilitate responding to public and news media inquiries about dry conditions. Publicize weather and water supply conditions, and drought preparedness actions. Tabulate Department and other water conservation programs available to water users and make this information available on a Web page.

Local Assistance Actions—Early Water Year Two

- Near the start of the water year, evaluate water supply conditions and define conditions triggering different levels of drought response, such as enhanced public education and media outreach or opening a drought water bank.
- If conditions warrant a higher level of drought response, begin putting an enhanced education and outreach program in place, including publicizing drought response actions through the Department's Water Information Center and SWP visitor centers. Begin increasing local assistance efforts, such as holding leak detection workshops for local agencies and making all mobile lab irrigation system evaluations accessible via a central point of contact. Begin surveying selected local water agencies to identify any problem areas.
- Evaluate staff resources available for processing water bank contracts and contracts for other wheeling of non-SWP water in the California Aqueduct, and take measures to augment staffing if needed. Also evaluate the need for surface water or groundwater monitoring programs associated with bank implementation.
- For Department-operated Sacramento River flood control facilities, schedule major maintenance activities that would be facilitated by dry conditions.
- Evaluate the need for any new legislation to address drought-related conditions.